



AEROSPACE MATERIAL SPECIFICATION

AMS1452™**REV. C**

Issued 1978-10
Revised 2015-02
Reaffirmed 2023-07

Superseding AMS1452B

(R) Disinfectant, Aircraft
General Purpose

RATIONALE

Changes in this revision include format/editorial changes and updates to specification revisions, as well as harmonization of the language with other specifications related to aircraft disinfectants.

AMS1452C has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

1.1 Form

This specification covers a general-purpose disinfectant in the form of a concentrated liquid.

1.2 Application

This material has been used typically for disinfecting lavatories and galleys of passenger aircraft, but usage is not limited to such applications. When used on surfaces which will come in direct contact with food, a potable water rinse may be required. Product may also be used for sanitizing hard surfaces in aircraft lavatories.

1.3 This specification deals only with the effect of the fluid on the materials of construction used in aircraft and does not address the efficacy of the fluid or approval to use this product in various locales. For example, in the United States of America (USA), any fluid purporting to have disinfecting or sanitizing properties must be registered with the Environmental Protection Agency. Similarly in the European Union (EU) all active substances in any biocidal products used to treat or contained in an article must be approved for use. It is the responsibility of the supplier to ensure the product meets the regulations of the locales where it will be used.

1.4 Safety - Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and processes and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

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<https://www.sae.org/standards/content/AMS1452C/>

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

AMS4049 Aluminum Alloy, Sheet and Plate, Alclad, 5.6Zn - 2.5Mg - 1.6Cu - 0.23Cr (Alclad 7075; -T6 Sheet, -T651 Plate), Solution and Precipitation Heat Treated

AMS-P-83310 Plastic Sheet, Polycarbonate, Transparent

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM D56 Standard Test Method for Flash Point by Tag Closed Cup Tester

ASTM D471 Standard Test Method for Rubber Property - Effect of Liquids

ASTM D1193 Standard Specification for Reagent Water

ASTM D1568 Standard Test Methods for Sampling and Chemical Analysis of Alkylbenzene Sulfonates

ASTM F483 Standard Practice for Total Immersion Corrosion Test for Aircraft Maintenance Chemicals

ASTM F484 Standard Test Method for Stress Cracking of Acrylic Plastics in Contact with Liquid or Semi-Liquid Compounds

ASTM F502 Standard Test Method for Effects of Cleaning and Chemical Maintenance Materials on Painted Aircraft Surfaces

ASTM F1104 Standard Test Method for Preparing Aircraft Cleaning Compounds, Liquid Type, Water Base, for Storage Stability Testing

ASTM F1110 Standard Test Method for Sandwich Corrosion Test

ASTM F2109 Standard Test Method to Determine Color Change and Staining Caused by Aircraft Maintenance Chemicals Upon Aircraft Cabin Interior Hard Surfaces

2.3 Other Publications

ANSI Z400.1/Z129.1 Hazardous Workplace Chemicals - Hazard Evaluation and Safety Data Sheet and Precautionary Labeling Preparation

3. TECHNICAL REQUIREMENTS

3.1 Material

Composition of the disinfectant shall be optional with the manufacturer but shall be a uniform mixture meeting the requirements of 3.2.

3.1.1 Disinfectant shall comply with registration, efficacy, toxicological, and other requirements of:

World Health Organization and Member States, as applicable

United States Environmental Protection Agency

United States Department of Agriculture

United States Public Health Service

Regulation (EC) No. 528/2012 of the European Parliament and of the Council of May 2012 concerning the making available on the market and use of biocidal products

3.1.1.1 Disinfectant shall conform to the requirements for a Class III disinfectant under the Federal Economic Poisons Control Act and shall be registered as such by the U.S. Environmental Protection Agency. The disinfectant identification label (See 5.1.3) shall show the registration number and manufacturer identification number as required by the above act.

3.1.1.2 The disinfectant active agent must be approved for use within the EU as required by the regulation listed above.

3.2 Properties

Disinfectant shall conform to the following requirements; tests shall be performed in accordance with specified test methods on the disinfectant supplied in concentrated form and at use dilution recommended by the manufacturer as hereinafter specified:

3.2.1 Concentrated Disinfectant

3.2.1.1 Flash Point

Shall be not lower than 212 °F (100 °C), determined in accordance with ASTM D56.

3.2.1.2 Accelerated Storage Stability

Disinfectant shall remain homogeneous and shall show no evidence of layering, separation, settling, or crystallization, determined in accordance with 3.2.1.2.1 and 3.2.1.2.2.

3.2.1.2.1 Elevated Temperature

One 6-ounce (175-mL) sample of the product shall be placed in 8-ounce (250-mL) clear glass bottles and sealed and, from that time until test is completed, shall be handled so as to minimize movement of the sample. The jar shall be exposed for 120 hours $\pm$ 1 at 122 °F $\pm$ 5 (50 °C $\pm$ 3). At the end of the 120 hour period, remove sample to a room-temperature environment, and allow to cool completely and examine for conformance to 3.2.1.2.

3.2.1.2.2 Cold Temperature

One 6-ounce (175-mL) sample of the product shall be placed in 8-ounce (250-mL) clear glass bottles and sealed and, from that time until test is completed, shall be handled so as to minimize movement of the sample. The jar shall be exposed for 120 hours $\pm$ 1 at 14 °F $\pm$ 5 (-10 °C $\pm$ 3). At the end of the 120 hour period, remove sample to a room-temperature environment, and allow to thaw completely and examine for conformance to 3.2.1.2.

3.2.2 Concentrated Disinfectant and At Use Dilution

3.2.2.1 Corrosion of Metal Surfaces

3.2.2.1.1 Total Immersion Corrosion

Disinfectant shall neither cause staining, pitting, or corrosion nor cause an average weight change of AMS4049 alclad aluminum alloy panels greater than 0.3 mg/cm² per 24 hours, determined in accordance with ASTM F483.

3.2.2.1.2 Sandwich Corrosion

Specimens of AMS4049 alclad aluminum alloy, after test, shall show a rating not worse than 1 or not worse than control panels using ASTM D1193, Type IV water determined in accordance with ASTM F1110.

3.2.2.2 Effect on Aircraft Materials

3.2.2.2.1 Effect on Transparent Plastics

Disinfectant shall not craze, stain, or discolor Type C acrylic plastic, determined in accordance with ASTM F484. Disinfectant shall not craze, stain, or discolor AMS-P-83310 polycarbonate plastic, determined in accordance with test procedures specified in ASTM F484 on specimens stressed for 10 minutes $\pm$ 1 to an outer fiber stress of 2000 psi (13.8 MPa).

3.2.2.2.2 Effect on Painted Surfaces

Disinfectant shall neither decrease the hardness of the paint film by more than two pencil hardness levels nor shall it produce any streaking, discoloration, or blistering of the paint film, determined in accordance with ASTM F502.

3.2.2.2.3 Effect on Rubber

Disinfectant shall neither cause more than 25% loss of tensile strength and 25% loss in elongation nor cause more than $\pm$ 15% change of volume, when tested on material specified by the purchaser, in accordance with ASTM D471. The test conditioning shall be performed at room temperature and the immersion period shall be 24 hours.

3.2.2.2.4 Effect on Vinyl Surfaces

Disinfectant shall neither cause scratching nor more than a minimal color change or staining, when tested in accordance with ASTM F2109.

3.2.2.2.5 Effect on Tedlar Surfaces

Disinfectant shall neither cause scratching nor more than a minimal color change or staining, when tested in accordance with ASTM F2109.

3.2.3 Long Term Storage Stability

The disinfectant, as delivered, shall be tested in accordance with ASTM F1104, and shall be restorable to its original appearance by moderate shaking, and shall meet all technical requirements after the storage stability period of 1 year.

3.3 Quality

Disinfectant, as received by purchaser, shall be a uniform mixture, shall show no separation or layering, and shall be free from foreign materials detrimental to usage of the disinfectant.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection

The vendor of disinfectant shall supply all samples for vendor's tests and shall be responsible for the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the disinfectant conforms to the requirements of this specification.